SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB

Shortia galacifolia

Oconee Bells

1Q 2019

Board of Directors

President	Susan Sunflower
Vice-President	Gayle Mercurio
Secretary	Mary Standaert
Treasurer	Alan Graham
Members at Large	Joe Standaert and John Harrison

MEMBER NEWS

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For any change of address, email or telephone number, please inform Alan Graham, 42 Autumn Glen Court, Brevard, N.C., 28712. 828-884-3947 —— adgraham@comporium.net.

PRESIDENT'S MESSAGE

by Susan Sunflower

SPRING? Spring!!

Today, end of February, a Transylvania County neighbor tells me flowers are blooming, ahead of schedule. Hard to believe after the over winter news of too much snow, ice storms and, just last week, too many inches of rain. Of course I'm glad of the news, for you all now and for all of us looking forward to spring ephemerals.

Here in the Florida Scrub, it is spring, in a quiet sort of way … the Shiny blueberry, Vaccinium myrsinites, has been blooming since early this month. The lyonias, relatives in the heath family were beginning to bloom, L. ferruginea, Rusty, and L. lucida, Fetterbush, as in our mountains., By mid-month, I found the white, long stemmed Long-leaf viola lanceolata. Nearby was the Florida violet, Viola floridana, similar in look to our common violet.

Suddenly there were a few more pollinators! And birds singing! Ah, Spring … I'm looking forward to sharing it, there with you!

Velvet Blue Spread Fungus

by Penny Longhurst

In the middle of October I was doing the usual weekly clean up on one of the trails Howard and I maintain. I picked up a fallen branch and was about to discard it when I noticed an amazing bright blue coloration on the underside of the bark. I took pictures with my trusty phone and put the branch aside planning to come back and examine it more closely later. Now I can't find it! I've looked and looked and I just can't find it anywhere!

Fortunately with the pictures I was able to identify my discovery and maybe explain why I can't locate it again. My find was *Terana caerulea* (commonly known as the Cobalt Crust Fungus or Velvet Blue Spread). It is found in temperate regions all over the world and was first described by Lamarck in 1779. This beautiful fungus lives on dead or decaying logs and branches in damp hardwood forests (it's saprophobic). The reason I probably couldn't find it on my return visits is because it lives on the underside of its host. In that way its spores simply drop to the ground after they are produced. I probably left the branch with the fungus blue-side-up, so that I could find it again, removing it from its favored environment. I suspect that either the colors faded or, sadly, the fungus died.

So next time you turn over broken branches, look for Blue Velvet, but remember to replace it blue side down!

References

Bob Thomas. Cobalt Crust, Terana caerulea. A lovely fungus. Loyola University Natural History Writings. October 19, 2011.

iNaturalist.org. Terana Caerulea

Missing Plants

We have plants in our database that we've never recorded. Maybe if we knew what they looked like we could find them.

Velvetleaf

Abutilon theophrasti

Description:

From the axils of the upper leaves, there occasionally develops a single flower about ¾" across. It consists of 5 petals that are orange-yellow or yellow, 5 sepals that are pubescent and light green, and numerous stamens with golden yellow anthers that surround the pistil in a loose cluster. The flowering stalk of each flower is about 1" long, which is much shorter than the petioles of the leaves. The blooming period usually occurs from late summer to early fall, and lasts about 1-2 months. The flowers are sparingly produced and short-lived. Each flower is replaced by a fruit about ¾" across. It is initially light green, but rather quickly turns brown or black with maturity. This fruit consists of a ring of about 10-15 flattened seedpods. Each seedpod has a stout beak and contains about 5-15 seeds. Each seed is greyish brown, somewhat flattened, and either reniform (kidney-shaped) or cordate (heart-shaped). The root system consists of a stout white taproot. This plant spreads by reseeding itself.[1]

[1] "Velvetleaf (Abutilon theophrasti) - Illinois Wildflowers." http://www.illinoiswildflowers.info/weeds/plants/velvetleaf.htm. Accessed 20 Feb. 2019.

Book Review

Wildflower Walks & Hikes - North Carolina Mountains

By Jim Parham. Milestone Press, 2019.
Reviewed by Penny Longhurst.

Jim Parham is a local author who has written several guidebooks on outdoor activities in the southern mountains. His latest book describes 59 short walks and longer hikes in western North Carolina. The areas described are probably familiar to many of us, ranging along the Blue Ridge all the way from Joyce Kilmer Memorial Forest as far North as Mount Mitchell and Mount Jefferson State Parks. Several of our field trip locations are included, including Whiteside Mountain, Sam Knob, Pink Beds, Moore Cove, Andy Cove, Wintergreen Falls (one of 4 trips in DuPont), Asheville Botanical Gardens, Craggy Gardens, and an oldie but goodie, Poll's Gap, which we will be visiting in May after many years' absence.

Don't expect this book to be a wildflower guide with in depth descriptions of all the flowering plants seen along the trails traveled. It's not. Keen botanists will need to take a plant book along for identification purposes. However, as a trail guide, it could be helpful for newcomers to the area. The book is divided into several sections: walking and hiking guidelines, the 59 walks and hikes, forest types, 33 pages of wildflower pictures sorted by date of flowering and color, appendices, and a wildflower index (the only place where botanical names are mentioned).

Each trip description includes a topo map and general information about the walk or hike including the best time to go, driving directions, and a single wildflower "Star Attraction". This consists of a photograph and 3 or 4 lines of text describing the plant. Sometimes the introduction mentions other flowers that may be seen along the way. For Polls Gap, the Star Attraction is Fringed Phacelia and for the Pink Beds, Swamp Pink. Star Attractions expected to be seen in DuPont include both Yellow and Pink Lady's Slipper Orchids and Yellow Fringed Orchids. Other club favorites also made the list. Generally, the trip descriptions don't say exactly where the "Star" is located. In many cases, that may not matter. DuPont is full of Yellow Fringed Orchids and Pink Lady's Slippers; they are around almost every corner. In contrast, as the author himself says, Swamp Pink can be elusive. We've never found Swamp Pink in the Pink Beds on any of the Club field trips! While I don't necessarily agree with what was chosen as the "Super Star" for each trip, since the choices are generally not exclusive to that site, it works. For instance, Carolina Rhododendron and Catawba Rhododendron are the Stars for Sam Knob and Craggy Gardens, respectively, but may also be seen at many other locations along the Blue Ridge Parkway. Similarly, Jack-in-the-Pulpits, the Stars of the Moore Cove walk, are a dime a dozen, found on almost every trail.

Wildflower Walks & Hikes includes a nice number of different types of day trips to interesting places within a day's drive for most of us. The photography and maps are excellent and the book has a solid feel to it. Driving and hiking directions are clear and GPS coordinates for the trailhead (always useful) are given. While it may not be a very useful resource for most club members, it could make a good gift for someone interested in trying some local hikes, as well as members looking for somewhere new to visit. We will certainly be using the information provided for our field trip to Heintooga Spur and Polls Gap in May.

A Message from the Past

Those Latin Names[2]

Betty Jones

Have you ever noticed how often we ascribe human or animal features to inanimate things, like the "mouth" of a river or the "head" and the foot" of the stairs? The people who gave names to plants, noting the similarity between a part of a plant and some animal structure, did the same thing and incorporated the structure into the plant name. I started this article thinking I could cover the body from head to foot, but found that so many body parts were used that I had to limit this piece to structures above the neck. Examples:

Cephalo- (Greek) refers to the head. Consider *Helianthus microcephalus* or Small Wood Sunflower. *Micro* (small) and *cephalus* (head) refer to the relatively smaller head of this *Heli* (sun) *anthu*s (flower)

Crist- (Latin) means crest. Thus we have *Iris cristata* (Crested Dwarf Iris), *Platanthera cristata* (Crested Fringed Orchid) and Cladonia cristatella (British Soldiers) whose other common name is Red Crest Lichen.

Coron- (L) is crown. We see this root in English words: "Coronation" and "coroner" which literally means "officer of the crown". In plants we have *Coronilla varia* (Crown Vetch) whose flower heads resemble fancy pink crowns.

Auri- (L) refers to ears. On our walks we find *Coreopsis auricula*ta (Eared Coreopsis) which have a pair of earlike lobes at the base of the leaf blade.

Corn- (L) means horn. The genus name for Dogwood (Cornus) comes from this root. An English botanist John Parkinson said, "The wood is very hard, like unto horne, and thereof it obtained the name." The beautiful *Delphinium tricorne* (Dwarf Larkspur) takes its name from the horn-like extension of the upper petal. In *Corylus cornuta* (Beaked Hazelnut), corn refers to the horn-like projection on the nut.

Capill- (L), **Crini**- (L), **Pil**- (L) and **Tricho**- (G) all refer to hair. These roots give us *Crepis capillaris* (Smooth Hawk's Beard) *Adiantum capill*us-*veneris* (Southern Maidenhair), *Gentianopsis crinita* (Fringed Gentian), *Hieracium pilosella* (Mouse-ear Hawkweed), *Symphyotrichum pilos*us (White Heath Aster), *Galium pilosum* (Hairy Bedstraw), *Polytrichum commune* (Haircap Moss) and the genus *Trichostema* (Blue Curls) which have hairy stamens.

Denti- (L) and **Odonto**- (G) mean teeth. The botanical name for the Toothworts used to be *Dentaria* but has been changed to *Cardamine*. We still have *Sibbaldiopsis tridentata* (Wine-leaved Cinquefoil) which have 3 teeth at the apex of the leaflets. From the Greek we get *Corallorhiza odontor*hiza (Late Coralroot) whose name literally means "coral-like rhizomes, toothlike rhizomes (or roots)"

Rostr- (L) is beak. The *Viola rostrata* (Long-spurred Violet) might easily have been called Long-beaked Violet for the long backward-extending petal that resembles a spur or beak.

Blepharo- (G) refers to eyelashes. Hence, the root is used in names for plants which have fringed edges on the petals. *Plantathera blephariglotti*s (Large White Fringed Orchid) is a good example. The glottis- (G) in that name means tongue; the lower petal of the flower does indeed resemble a tongue with lashes.

[2] Shortia XXIII (2) Summer, 2001

SHORTIA

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The mission of the Club is to identify and study native plants and their habitats and to advocate the protection of biodiversity in our natural world. Membership is open to all. Individual/family memberships are $15. New members joining from the period July 1-December 31 pay $8. All memberships are renewable on January first of each year. Send dues to Alan Graham, 42 Autumn Glen Court Brevard, NC 28712.

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PRESIDENT'S MESSAGE

Susan Sunflower

Time for change! Spring to summer - will this one be dry or wet? And this Presidency … on to Gayle Mercurio! (Did you know we first met her and Vince at Wolf Mountain Overlook?) And we'll be welcoming new officers, too.

This has been a lovely experience for me, these past two years, thank you all! Especially fun have been the Board meetings; no matter the long list of topics to cover, we did them in 2 hours - much to my surprise! These are excellent workers, and there's laughter, too. Special thanks go to Ken Borgfeldt for continuing SHORTIA. There are many others among us who quietly do things that support WCBC - much appreciated, too, even if not noted out loud!
Happy Summer - and may you find new treasures in your yard, like the Cleistes divaricata (Rosebud Orchid) mysteriously arrived in mine!

Best wishes, Susan

2018 Annual Meeting of WCBC held at Bullington Gardens - Minutes

The 45th meeting of the WCBC was called to order at 11:00 a.m. on July 6, 2018 by President Susan Sunflower. Twenty-six members and guests were in attendance. Minutes of the July 7, 2017 annual meeting were read and accepted as written.

President Sunflower reported that there had been two Board meetings this year. No important issues were ongoing. She invited members to attend the meetings if they wished. In the absence of Joy Charlebois, Scheduler, President Sunflower announced that the next scheduling meeting will be held on July 23 at 10 a.m. at the Etowah Library. She invited interested participants to attend. She reported that Joe Standaert had scanned all Recorder's reports up to the year 2000 and the old copies had now been discarded. Alan Graham gave the Treasurer's Report. The club has 92 members. The Club monetary balance stands at around $4,500. Expenses for the current year were $300 over last year and, at this rate of spending the balance will approach zero in about 15 years. The Board decided that when the balance reaches $2,000 an increase in dues may be made. An $800 donation was made by the club to Bullington Gardens.

Lucy Prim, Shortia Editor, asked members to submit articles for Shortia. The next due date is September 1. Jean Kirkland asked if she could use a Shortia article that Lucy had written on the Pawpaw. It was agreed that any article could be used with an appropriate citation. President Sunflower thanked Lucy for the beautiful wildflower greeting cards that she creates and donates to the club.

Ken Borgfeldt, Master Recorder, was away.

Juanita Lambert reported on the club's work at Bullington Gardens. Currently, Juanita and Larason Lambert are the only members tending the Native Woodland Garden. They work on Tuesdays from 9 to 12 from March to November; new helpers would be welcomed. Two club workdays were held in the past year on July 7, 2017 (12 participants) and May 14, 2018 (14 participants). Planting, weeding, and removal of invasive and aggressive species took place. Numerous members have made donations of native plants. Larason has been busy repairing broken fences, diverting excess water from beds and paths, and maintaining the Vaseyi Society Azalea garden. Juanita and Bonnie Arbuckle led a walk for 8 participants through the Garden. The planned brochure, map, and species list have yet to be completed, due to the amount of work needed in the garden.

A moment of silence was held for Ken Anderson, a long-time club member who passed away in January. Ken was a master gardener and an avid naturalist and belonged to several birding and plant organizations. He was an active volunteer at Bullington until old age slowed him down. Donations in his memory may be given to the Bullington Gardens, 95 Upper Red Oak Trail, Hendersonville, NC 28792.

President Sunflower had several announcements:

She invited members to submit suggested walks for the scheduling team.

She invited members to submit suggested plants they would like Christine at Raymond's Nursery to grow.

She asked members to sign cards for Joe and Mary Standaert and Peggy Polchow.

She invited suggestions on what to do with an original Dick Smith drawing donated to the club by Jeanne Smith.

Larason Lambert invited recommendations on how to improve the field trips at Fernhaven. He will send out an email questionnaire. It was suggested that when field trip groups become large the leader might plant flags next to plants of interest so that people at the rear of the group can see what is being discussed. The sweep or some designated club member will then collect the flags as they pass by. The meeting was adjourned at 11:45 a.m., followed by a potluck lunch and a plant exchange.

Respectfully submitted,

Penny Longhurst, Acting Secretary

Missing Plants

We have plants in our database that we've never recorded. Maybe if we knew what they looked like we could find them. The plant for this quarter ……..

Wolfsbane (*Aconitum reclinatum*)

 [1]

Roots slender, elongate, fascicled. Stems erect, reclining or climbing, 6-25 dm. Cauline leaves: blade 3-7-divided with more than 4mm leaf tissue between deepest sinus and base of blade, 12-20 cm wide, segment margins cleft and toothed. Inflorescences open racemes or panicles. Flowers white to cream colored, 18-30 mm from tips of pendent sepals to top of hood; pendent sepals 7-10 mm; hood conic to nearly cylindric, 15-23 mm from receptacle to top of hood, 4-12 mm wide from receptacle to beak apex.

Flowering late spring-summer (Jun-Sep). Shaded ravines of woods in mountains and upper piedmont; to 1700 m; N.C., Pa., Va., W.Va.[2]

NC Locations: Ashe, Avery, Buncombe, Cherokee, Graham, Haywood, Henderson, Jackson, Macon*, Mitchell, Transylvania*, Watauga, Yancey[3] * Extirpated/possibly extirpated

[1] http://lucasland.org/New%20Images%202013/whitemonkshood-1.jpg
[2] "Aconitum reclinatum in Flora of North America @ efloras.org." http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=233500020. Accessed 4 Apr. 2019.
[3] "Comprehensive Report Species - Aconitum reclinatum." http://explorer.natureserve.org/servlet/NatureServe?searchName=Aconitum+reclinatum. Accessed 10 Apr. 2019.

Our North Carolina Mountain Saxifrages

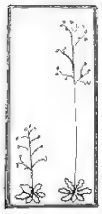
by Lucy Prim

One of our Saxifrages, *Micranthes petiolaris*, has been causing me a bit of confusion over the almost fourteen years that I've been in the Botany Club. I wasn't quite sure why I was confused, but I had an ill-at-ease sort of feeling that I didn't understand something. What was it? Now I have figured it out—that is the benefit of writing an article for Shortia! First of all, the plant is called different names in my various references. Several of my books call it "*Saxifraga michauxii*", others (including Weakley) call it "*Hydatica petiolaris*", and others call it "*Micranthes petiolaris*." No wonder I was confused! ITIS says that the "accepted name" is "*Micranthes petiolaris*", so that is the one I will use, although we may find one of these days that the name changes to the one Weakley prefers. He no doubt has good reasons! So that is one confusion settled.

Another reason I have been confused by this particular Saxifrage is that it does not match up with the description in one of my favorite reference books, "Wild Flowers of the Southern Mountains" by Richard Smith. This book says it grows on wet rocks and blooms in the summer. I walk at Carl Sandburg's almost every day, and I see it growing in great abundance on very dry rocks and blooming from early spring on into late summer. Could this be the same plant? Yes, apparently it is! I read descriptions in other books and found that it can grow on both dry and wet rocks and blooms from spring to summer, just as I was observing on my walks. Sometimes the leaves are a remarkably beautiful red color, which also confused me at first. But now I know not to let bright red leaves confuse me. Plants can do that. Knowing what the flower looks like makes this plant easy to identify since it is the only Saxifrage with a flower this unique shape—such an amazingly lovely little flower!

And as I was researching this one Saxifrage, I thought I'd research the others as well and make another chart!

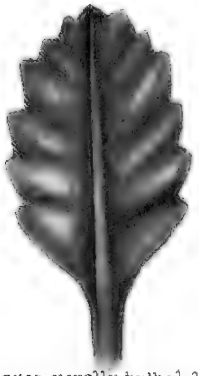
Micranthes virginiensis
Early Saxifrage



Flower has five white equal sized petals

Usually under 1' tall, but sometimes up to 1½' tall.

Grows in moist rocky places and stream banks
Blooms March-May



Leaves usually toothed but sometimes crenate. About 2" long.

Micranthes petiolaris
Michaux's Saxifrage

This Saxifrage grows in wet or dry rocky places. It begins blooming in early spring and then continues on blooming into mid-summer.

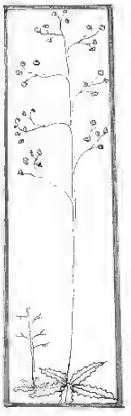
In 1905 it was placed in the genus "Hydatica" Weakley uses this classification, but ITIS declares the name "Hydatica petiolaris" - Not accepted.

<1' tall up to 1½' tall.

Michaux's Saxifrage is the only Saxifrage with a flower like this.

Leaves are a few inches to 6 inches long.

Micranthes micranthidifolia
Brook Lettuce



1'-3' tall

Leaves can be up to 8" long.

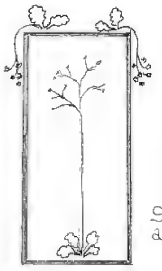
They used to be gathered up or purchased in grocery stores to serve as spring greens, served with bacon grease, and flavored with vinegar and sugar.

Micranthes careyana
Carey's Saxifrage

Micranthes caroliniana
Carolina Saxifrage

These two Saxifrages look the same except for two details in the flowers.

Sepals point up



Often seen cascading down a wet rock. Grows about 1½' tall.

Sepals point down

Sometimes yellow spots on petals

Filiform filaments

Rare, but can be found in our area.

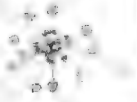
Clavate filaments

Very rare. Only found in a few northern-most mountain counties in N.C.

Leaves under 4 inches, margins abruptly curl in to the petiole

Micranthes pensylvanica
Swamp Saxifrage

Grows up to 4' tall



Flower only ¼" across
Green, yellow or purple

In our mountains this Saxifrage is very rare, found only in bogs, and seeps.

Leaves 4-8" long and entire or minutely toothed

What's in a Name – *Vaseyi*

by Penny Longhurst

Springtime is Vasey-time. Each year we eagerly anticipate our field trips to see Pinkshell Azalea (*Rhododendron vaseyi*), a shrub that grows only in the North Carolina mountains, and the amazingly deep red colors of Vasey's Trillium (*Trillium vaseyi*). It is generally assumed that these plants were named after George S. Vasey, a botanist who worked for the Department of Agriculture and specialized in the study of grasses. However, as you will see, it was probably his son, George Richard Vasey, who first discovered them.

Pinkshell azalea (*Rhododendron vaseyi*)

Vasey's Trillium (*Trillium vaseyi*)

George S. Vasey was born in North Yorkshire, England, in February 1822. His parents immigrated to the USA the following year and settled near Utica, NY. Vasey was interested in botany from an early age, learning botanical names and corresponding with and collecting specimens for eminent botanists such as John Torrey and Asa Gray. Around 1847, Vasey graduated from the Berkshire Medical Institute in Pittsfield, Massachusetts with a Degree in Medicine. After graduation he married and moved near Watertown, NY to practice medicine. In 1848 the Vasey family moved to Illinois, where he continued to practice medicine and botanize in his spare time. He was a founding member and President of the Illinois Natural History Society.

In 1868 he was recruited by John Wesley Powell, who was the curator of the Natural History Museum at the State Normal University of Illinois (now Illinois State University), to be the botanist on an exploratory expedition to Utah and Colorado. Vasey returned to Illinois with hundreds of specimens for his fellow collectors, strengthening his reputation as a botanist. Powell continued his travels in the 1870's leading The Rocky Mountain Scientific Exploring Expedition, navigating the Grand Canyon, and naming "Vasey's Paradise" after his colleague. In 1870 Vasey was appointed to replace Powell as curator and then, in 1872, recruited as botanist of the Department of Agriculture and curator of the U.S. National Herbarium at the Smithsonian Institution in Washington, D.C. At the Smithsonian he greatly expanded the herbarium, which contained plants collected on various government-funded expeditions as well as those donated by or purchased from private collectors. Coming from the Prairies, Vasey had always been interested in grasses and sedges, and wrote a

special bulletin on the agricultural grasses of the United States, as well as many monographs. With his exploring days over, he relied on specimens sent to the herbarium by his friends and other collectors, including one of his sons, George Richard Vasey.

Vasey died in Washington D.C. on March 4, 1893 of acute peritonitis. Three genera, *Vaseya* (now part of *Muhlenbergia* - Grasses), *Vaseyochloa* (Grasses), and *Vaseyanthus (*now *Echinopepon* - Gourds, etc.), and numerous species (mostly grasses) are named after him.

Little is known of the other naturalist in the family, George Richard, who was born around 1853, the third of Vasey's 6 children with his first wife. There is a published list of his collected plants and he is mentioned in at least one letter written by his father. Thus, he spent many years collecting in Arizona, California (172 specimens), New Mexico, and Texas between 1868 and 1881, before settling in Washington State. He is thought to have moved to Alberta, Canada around 1905, and died there in 1921.

Of interest to us, on an 1878 expedition to North Carolina, George Richard collected *Rhododendron vaseyi, Solidago arguta var. caroliniana, Trillium vaseyi,* and *Waldsteinia parviflora*, which he sent to his father for his collections. Somehow these were missed by earlier naturalists, probably due to the timing of their trips. In January 24, 1879 George S. Vasey wrote to Asa Gray *"Your letter respecting the Rhododendron is rec'd. I am glad that you decided to publish it. My son writes that it was collected on the summit of balsam mountain, about 7 miles S.W. from Webster, Jackson Co. N.C. about June 3rd 1878. He does not state the size of the bushes but I will write and inquire…. P.S. As to the name of the Rhododendron use your judgement. I do not much care on my own account, perhaps it might stimulate my son to some new zeal etc. I had thought R. carolinianum would be appropriate…… If it had any commercial value I would like my son to get the benefit – but it would cost 100 or more dollars to go there and then probably not get an ounce of seed."*

Evaluation of the botanical influence of George Richard is complicated by the tendency of writers at that time to lump him and his father together as "George Vasey", and contribute many of his botanical findings to George S. Even Thomas Harbison seems to have confused father and son when he named *Trillium vaseyi,* writing "*Trillium vaseyi … was collected in the mountains of North Carolina in 1878 by Dr. George Vasey, whose name I take pleasure in associating with this species*."

The specific epithet *vaseyana* refers exclusively to George Richard Vasey. Two plant species are named for him, Sandpiper Oak (*Quercus vaseyana*) and Mountain Big Sagebrush (*Artemisia tridentata ssp. vaseyana*), both collected out West.

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List of specimens collected by George Richard Vasey, Harvard University Herbaria and Libraries

Letter from George S. Vasey to Asa Gray (Jan 24, 1879) describing the collection of Rhododendron vaseyi

A Message from the Past

Those Latin Names

Betty Jones

Let's continue our look at body parts that appear in the Latin names of plants. In the Summer 2001 issue of *Shortia*, we started with structures that appear on the head. Now we will consider the rest of the body, in particular, features on the exterior of the body.

Brachi- (Greek) means arm. This root appears in *Sabatia brachiata* (Narrowleaf Rose-pink), probably referring to the branches or 'arms' coming off the main stem. This root should not be confused with *brachy* which is Greek for 'short'.

Ala- (L) and ***Ptero-*** (G) refer to wings. In *Lythrum alatum* (Winged Loosestrife), the reference is to the wing-like structures on the stem. The wing-like shape of the fronds gives *Pteridium aquilinum* (Bracken) its name.

Gonato- (G) is knee. Polygonatum or 'many knees' is the genus name for Solomon's Seal whose roots have many joints or 'knees'.

Digiti- (L) refers, of course, to digits or fingers. One thinks first of *Digitalis* (Foxglove) which was so-named for the finger-shape of its flower. In the wild we have *Penstemon digitalis* (Foxglove Beardtongue) whose flowers have the same finger shape as Foxglove. In 100 Flowers and How They Got Their Names, author Diana Wells says that "Foxgloves tend to grow on woody slopes where foxes' burrows are often found." Combine this with the glove or finger shape of the flower and you have Foxglove.

-seta (L) refers to bristles. This root occurs in our plant lists in *Polygonum cespitosum* var. *longisetum* or Long-bristled Smartweed. Those long bristles (1/4 to 3/8 inches long) appear at the sheath that surrounds the stem at each of the swollen leaf joints.

Spini- (L) are spines - the thorny, not the bony kind. The *Sida spinosa* (Prickly Mallow) has a short spine at the base of each petiole. If you are familiar with *Aralia spinosa* (Devil's Walking Stick), you recognize that it is aptly named.

-lepis (G) refers to scales. We find this root in *Bidens polylepis* whose name literally means "two-teeth, many scales". "Two-teeth" refers to the two barbs that catch on ones clothing as one walks by. I have been unable to find the reason for "many scales". This plant has several common names: Bur Marigold, (Ozark)Tickseed Sunflower and, my favorite, the name used by Dick Smith - Ditch Daisy.

-pinna (L) is the root for feather. We use this root whenever we say that leaves are 'pinnate', that is, arranged featherlike on either side of a common axis. The beautiful Purple Phacelia is named *Phacelia bipinnatifida* because its cauline leaves are twice or bi-pinnately divided. In ferns, a *pinna* is the leaflet or first division of the leafy part of the frond. The *pinnules* are divisions of the *pinnae* (plural of *pinna*).

Pedi- (L) and ***Podo-*** (G) refer to foot. *Cypripedium acaule*, literally translated, means Venus' (*Cypri*) slipper (*pedium*) stemless (*acaule*); we call it Pink Lady's Slipper. *Acaule* refers to the fact that it has no leafy stem. *Podophyllum peltatum* (Mayapple) means foot (*Podo*) leaf (*phyllum*) with the leaf attached to the stem at the center, not at the edge (*peltatum*).

Can You Tell? Is it a Petal, a Leaf, or a Bract?

By Penny Longhurst

I'm sure you saw plenty of Dogwood flowering this spring. Their white petals make them hard to miss. But maybe, unlike me, you knew those weren't petals! How about your Trillium anatomy? Well, it's a little tricky, and even the experts don't always agree, but sometimes what we think is an obvious petal or a leaf could really be a bract.

Flowering Dogwood
(*Cornus florida*)

Wake Robin
(*Trillium erectum*)

Jack-in-the-Pulpit
(*Arisaema triphyllum*)

Let's start with some definitions. Bracts are reduced leaf or leaflike structures found at the base of a flower or inflorescence. They are located above the leaves and below the flowers and sepals, can be large or small, and can vary in color.

Petals are the colored portion we most commonly associate with the flower head (not always correctly). We need to remember that there are two types of flowers, flattened ray flowers (the ones we usually spot first) and tubular disk flowers (often overlooked in the center of the flower head). That's often important in determining whether a flower part is a bract or a petal. Some bracts are brightly colored to attract insects to a smaller flower head (think Poinsettia or Bougainvillea; those red "petals" are bracts). Dogwood species, including *Cornus florida*, have rounded and notched showy white bracts that surround and extend under the inflorescence. In the photograph on the left you can see the small yellow disc flowers surrounded by white bracts, but no petals.

Some bracts, for instance in the Aster family, have a protective function, curling around new buds to protect them from insects or insulate them from freezing weather while they are growing. The pulpit of Jack-in-the-Pulpit (*Arisaema triphyllum*) is a specialized bract, called a spathe. It forms a protective hood over the spadix, the club-like spike which bears clusters of tiny flowers.

The leaf is the photosynthetic part of a plant. Internally bracts and leaves are indistinguishable. However, leaf-like bracts are typically thinner than true leaves and undergo photosynthesis at lower rates.

Structurally, Trillium differ from most other plants. The Trillium "stem" is an underground, horizontal rhizome. The rhizome is covered with dry, scale-like modified leaves called cataphylls. The stalk that arises from the

rhizome is a leafless scape or peduncle bearing a flower. Thus, by definition, the leaf-like photosynthetic structures on trillium are bracts. Now I know!

References:

Frederick W. Case and Roberta B. Case. Trilliums. Timber Press, Portland, 1997.

Marie Harrison. Bracts: Leaves, Petals, or Something Else? Dave's Garden, Article 3156, April 20, 2017

Scott Namestnik: Trillium Morphology. Orbis Environmental Consulting, Your Daily Dose of Botany, April 2014

Trillium. In:Flora of North America, eflora.org

SHORTIA

A quarterly publication of the Western Carolina Botanical Club

Vol. XXXI No. 2

Editor: Ken Borgfeldt
2Q, 2019

The mission of the Club is to identify and study native plants and their habitats and to advocate the protection of biodiversity in our natural world. Membership is open to all. Individual/family memberships are $15. New members joining from the period July 1-December 31 pay $8. All memberships are renewable on January first of each year. Send dues to Alan Graham, 42 Autumn Glen Court Brevard, NC 28712.

SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB

Shortia galacifolia

Oconee Bells

Fall, 2019

Board of Directors

President	Gayle Mercurio
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Secretary	Mary Standaert
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Members at Large	John Harrison and David Havener

MEMBER NEWS

Field Trip Cancellations: Occasionally, field trips must be canceled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by email to all members by 7 AM the day of the field trip. If you do not have email access, please call the leader, co-leader, or recorder (whose phone numbers are listed on the schedule) to be sure that the walk is going to go as planned. Indoor programs are canceled when Henderson County Schools are closed (see http://www.hendersoncountypublicschoolsnc.org) but NOT necessarily canceled because of the delayed opening.

For any change of address, email or telephone number, please inform Alan Graham, 42 Autumn Glen Court, Brevard, N.C., 28712. 828-884-3947 —— adgraham@comporium.net.

PRESIDENT'S MESSAGE

Gayle Mercurio

Our entire club would like to extend to our past president, Susan Sunflower, our thanks for the great job she has done. We appreciate it, Susan.

Some time ago, Susan made us aware of the important job honey bees have in pollinating wildflowers. Bumble bees are also valuable pollinators of wild and cultivated plants. Unfortunately, it has been documented that bumble bees have greatly declined in number in North America as well as South America, Europe and Asia. In the US, we have lost 50% of our bumble bee population in the last few years. One species is thought to be extinct and several which were common have become extremely rare.

This decline is due to many factors, the most recognized are loss of habitat, fewer flowers to pollinate, pesticides, disease brought into their environment, fungi and viruses. Unlike honey bees, bumble bees are native to North America and therefore critical to our lives. Bumble bees can pollinate innumerable flowers, fruits and vegetables that cannot be pollinated by other insects including the honey bees. We would not have tomatoes, peppers, potatoes, eggplants and many other vegetables or fruits and berries like blueberries if not for bumble bees. All of their flowers must be "buzz pollinated". Only a bumble bee can "buzz pollinate" by grabbing the flower in their jaw and forelegs and vibrating their wing muscles to shake pollen from the anther. Bumble bee wings beat 130 or more times per second. That's a whole lot of "shakin" going on!

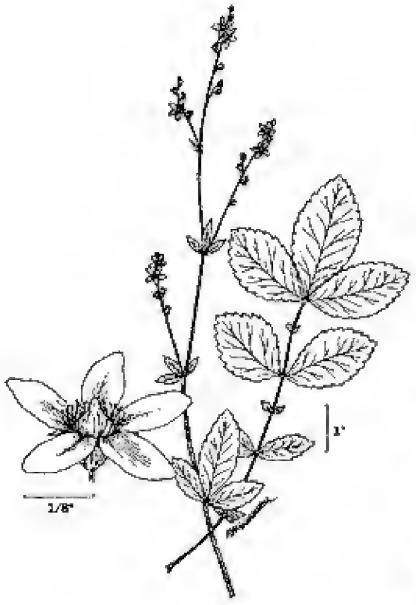
Compared to honey bees, bumble bees visit twice as many flowers per minute, begin pollinating earlier in the spring in cold weather and end later in the fall. They can do 8 times more work than a honey bee each day. In greenhouse food production, they pollinate $10 billion worth of produce annually. On American farms they help bring in $9 billion annually.

So next time you see a bumble bee don't run, scream and flail your arms in the air like my neighbor. Don't swat it either. Instead stop, observe its tenacity and say thank you. Occasionally I reach over and lightly give a bumble bee's soft fuzzy back a light pat with my finger to let it know I'm grateful for its service.

Missing Plants

We have plants in our database that we've never recorded. Maybe if we knew what they looked like we could find them.

Beaked Agrimony (Agrimonia rostellata)



JK Marlow jkm120421_134
April Henderson County NC
Holmes Educational Forest

Principal leaflets 5-7, glabrous to remotely pubescent, coarsely serrate, rounded or oblanceolate with blunt teeth. **Name That Plant**

Agrimonia rostellata Wallroth, Woodland Agrimony. Mt, Pd, Cp (GA, NC, SC, VA): moist to wet forests and woodlands; common. July-August; July-October. CT west to IN and KS, south to SC, GA, LA, and OK. [= RAB, C, F, G, K, S, W, Z] **Weakley**

Stems slender, 2-8 dm tall, usually solitary or few, sparsely appressed pubescent to glabrous. Roots tuberous thickened. Principal leaflets 5-7 glabrous to remotely pubescent, elliptic, 2-8 cm long, 1-4 cm wide, acute, coarsely serrate, base cuneate to obtuse. Rachis of inflorescence glabrous to sparsely pubescent. Hypanthium hemispherie, smooth or ribbed, 1.5-2 mm long. Petals 3-4 mm long; stamens 10-15. Nutlet globose, 2-2.4 mm in diam. July-Aug: July-Oct. Woodlands, often swampy: mts., pied., rare in cp. **Manual of the Vascular Flora of the Carolinas**

Works Cited

NameThatPlant.net: Agrimonia Rostellata, www.namethatplant.net/plantdetail.shtml?plant=3253.

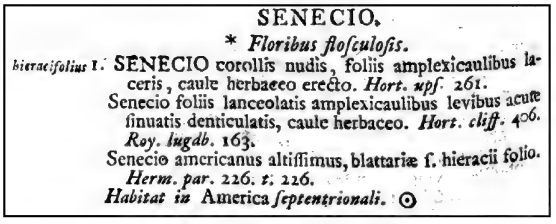
Radford, Albert Ernest, et al. *Manual of the Vascular Flora of the Carolinas*. Univ. of North Carolina Press, 1983.

Weakley, Alan S. *Flora of the Carolinas, Virginia, and Georgia*. University of North Carolina Herbarium, North Carolina Botanical Garden, University of North Carolina, Chapel Hill, 2005.

Plants We Love to Hate! Pilewort/Fireweed (*Erechtites hieracifolia*)

by Penny Longhurst

On our field trips we are surrounded by plants we love and some we hate (mentioning no names, think of Hog Peanut). Fortunately we don't see Pilewort (*Erechtites hieracifolia var. hieracifolia)* too often on our walks, but it is a plant that I absolutely loathe! In my opinion it's a true example of a nasty widespread weed, especially where I live. I was surprised to find out it's actually a native North American plant. In fact, it's been a weed for a very long time. Linnaeus named it *Senecio hieracifolius,* and included it in *Hortus Cliffortianus* as well as in *Species Plantarum* (1753, shown below), where it's listed as found in the boreal regions (*septentrionali*) of North America.



SENECIO.

* *Floribus floſculoſis.*

hieracifolius 1. SENECIO corollis nudis, foliis amplexicaulibus lanceris, caule herbaceo erecto. *Hort. upſ.* 261.
Senecio foliis lanceolatis amplexicaulibus levibus acute ſinuatis denticulatis, caule herbaceo. *Hort. cliff.* 406. *Roy. lugdb.* 163.
Senecio americanus altiſſimus, blattariæ ſ. hieracii folio. *Herm. par.* 226. *t.* 226.
Habitat in America *ſeptentrionali.* ⊙

I've seen two possible derivations for its common name, "Pilewort". One probably refers to the tufts of white hairs on the seeds (see pictures below), which may have been used as stuffing or pile for mattresses, pillows, stuffed animals, etc. Alternatively, the word "wort" is derived from an old English word, "*wyrt*," meaning plant. Typically a plant which was thought to have medicinal benefits was called a "wort", and the name of the malady or organ it was supposed to treat was included in the plant name. Thus, another explanation is that extracts of Pilewort were used to treat piles or hemorrhoids.

Erechtites hieracifolia is an aggressive, rapidly spreading, weedy annual that can reach up to 8 feet tall. It grows in disturbed land, especially in cleared areas and after fire (hence its other common name, Fireweed). It's made it into the Invasive Plant Atlas, and is reported as invasive (or should we say aggressive?!) in most states east of the Mississippi.

The growth patterns and leaves of *Erechtites hieracifolia* resemble the taller Lettuces (*Lactuca sp.*), but the flowering pattern is distinctively different. The leaves are alternate and irregularly lobed. Unlike the Lettuces, Pilewort has no ray flowers. In Newcomb's it's listed under "Parts Indistinguishable". The flowers are swollen discs, with a brush-like tip that is a greenish/creamy color. The fruits (achenes) are topped with soft white bristles (pappus) that carry the achene in the wind here, there, and absolutely everywhere. Fortunately individual plants can be fairly easily pulled out. Just make sure that you do it long before it flowers!

References:

Linnaei, Caroli:. Species plantarum. Holmiae :Impensis Laurentii Salvii, Vol 2. p. 866. 1753

American Burnweed: Invasive Plant Atlas

https://www.illinoiswildflowers.info/weeds/plants/pilewort.htm

Signatures

By Richard Wilbur

False Solomon's Seal—
So called because it lacks a
Star-scar on the heel,

And ends its arched stem
In a spray of white florets,
Later changing them

To a red, not blue,
Spatter of berries—is no
Falser than the true.

Solomon, who raised
The temple and wrote the song,
Wouldn't have dispraised

This bowed, graceful plant
So like an aspergillum,
Nor its variant

With root duly scarred,
Whose bloom-hung stem is like the
Bell-branch of a bard.

Liking best to live
In the deep woods whose light is
Most contemplative,

Both are often found
Where mandrake, wintergreen, and
Dry leaves strew the ground,

Their heads inclining
Toward the dark earth, one blessing
And one divining.

Richard Wilbur was born on March 1, 1921, in New York City. He was one of the most lauded and honored poets of 20th century American verse. He was the second poet laureate of the United States, succeeding Robert Penn Warren. Poem suggested by one of our members, Andrew Hamilton.

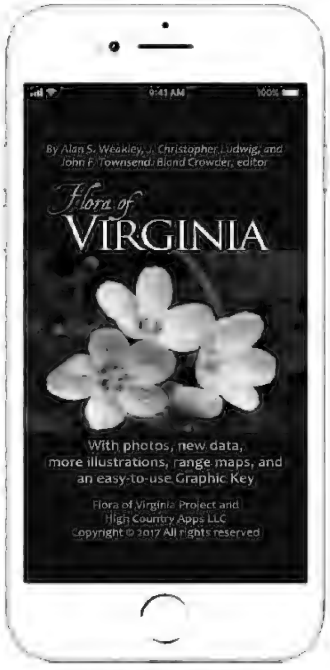
Flora of Virginia Mobile App

Reviewed by Lucy Prim

Have you ever been out in the woods, puzzling over a flower or a tree and wished you had one of your trusty ID books with you? I can optimistically predict I'll never find myself in quite that situation again, as long as I've remembered to bring my iPhone that is. Within the little body of my iPhone is a marvelous App called "Flora of Virginia!"

This is the official description of the App:

Flora Mobile App



THE FLORA APP was released on September 30, 2017, culminating a project that began in 2010. The App, for Android and iOS devices, contains everything you love from the print *Flora of Virginia*, with a lot more. It features an easy-to-use Graphic Key, in addition to the traditional dichotomous keys. Most species descriptions contain 1–5 photographs, and many include a botanical illustration. Treatments of rare or threatened species include conservation ranks, and invasives are scored as to level of invasiveness. And county-by-county range maps are now color-coded as to native or nonnative.

No Internet connection is required once it has been downloaded to your device.

The app will revolutionize the way Virginians* learn about plants, and kids as young as sixth grade will carry this mobile Flora with them.

Order via our homepage.

* The Flora of Virginia (book and App) covers the floras of West Virginia and Maryland more than 95%, those of surrounding regions 90–95%, and nearly every other region east of the Mississippi 75–90% (other than the northeast of Maine and the warmer reaches of the Southeast). So our Flora is your flora!

A few years ago, I wrote an article for Shortia about Alan Weakley's free online book called "Flora of the Southern and Mid-Atlantic States." This new App is also by Alan Weakley, along with two other fellows. I thought it would be interesting to write an article for Shortia comparing these two resources.

Here are the differences I've noticed:

1. The App "Flora of Virginia" costs $20. The online book "Flora of the Southern and Mid-Atlantic States" is free.

2. The App has lots of beautiful photographs, often several for a single species, as well as lovely illustrations by Lara Call Gallinger. (Quite a few species have no photos or illustrations yet, but this is a work in progress and no doubt over the years the gaps will get filled in.) The online book has no pictures at all.

3. The App gets updated periodically. The book is downloaded onto your device and doesn't get updated. (Beneath the title of the book is this: "Working Draft of 21 May 2015.")

4. The App has a Virginia map for each species showing in which counties it has been identified and whether or not it is native. The online book has species maps for the entire South East region with symbols showing "waif, rare, uncommon, common, endemic, native or non-native" and sometimes a compass rose showing distribution information. These maps are also helpful in narrowing down the possibilities of what species to consider when working on a difficult plant. Of course, the maps may be wrong, as Bonnie has pointed out!

5. The App only contains plants that grow in Virginia. The online book covers the entire South East area. This doesn't matter for us with many plants, but sometimes it does matter. With Trilliums for instance, it matters. The online book describes about 39 different species and varieties of Trillium in the South East region, but the App only describes the ten that grow in Virginia, leaving out *T. simile, rugelii, vaseyi, catesbaei, and cuneatum*.

So, to sum up my opinion of this App, it is very pretty with all the pictures and very useful, but it will not take the place of our favorite field guides, Name That Plant website, or Weakley's online book. My advice is get it—the more good resources the better! And if you find yourself waiting at the doctor's office or waiting for a late friend at a restaurant, you can have fun studying your plants!

A Message from the Past

Those Latin Names

By Betty Jones

In the previous two issues of *Shortia* we looked at examples of exterior body or animal structures that appear in the Latin names of plants. In this column we will complete this series and concentrate on interior structures.

Sanguin- (Latin root) meaning blood appears in *Sanguinaria canadensis*, the Latin name for our familiar spring flower Bloodroot. For less obvious reasons, this root also appears in *Polygala sanguinea* (Field Milkwort) and *Amelanchier sanguinea* (Serviceberry).

-aden (Greek) and ***Glandi-*** (L) refer to glands. In *Triadenum virginicum* (Marsh St. John's-wort) three clusters of stamens are separated by three orange glands. *Ribes glandulosum* (Skunk Currant) is so named for the glandular hairs on the fruit.

The roots ***Cordi-*** (L), ***-cor*** (L), ***Cardi-*** (G) and ***–cardia*** (G) all refer to the heart. This root is most familiar to us in *Aster cordifolius* (Heart-leaved Aster) and *Tiarella cordifolius* (Foamflower), both of which have leaves that are cordate, that is, heart-shaped at the base. *Meehania cordata* has leaves that are entirely heart-shaped. (See Plate 429 in Dick Smith's book.)

Note: The common and Latin names for the Cardinal Flower (*Lobelia cardinalis*) do not come from the Greek root ***cardi-***, but rather from the Latin root ***cardin-*** meaning hinge. One story says that when Queen Henrietta Maria of France (wife of Charles I) first saw this native American plant, she giggled and said that it reminded her of the red stockings worn by the cardinals of the Roman Catholic church, and the name stuck. The bird, cardinal, is also named for the cardinal-red color of its plumage.

Hepato- (G) refers to the liver. In times past, someone noted that the shape and the color of old leaves of a certain plant resembled the liver and named the plant *Hepatica.* Herbalists, also noting this resemblance, used *Hepaticas* to treat liver disease.

Hymenocallis, literally translates to membrane-beauty. ***Hymeno-*** is Greek for membrane. The beautiful Spider Lily, *Hymenocallis caroliniana*, is so named for its webbed filaments.

The Greek roots for bladder, ***cysto-***, ***-cystis***, ***Physo-*** and ***–physa*** appear in several plant names. In all cases, the plant is named for a bag- or bladder-like structure on the plant.

The genus name for several of our local ferns, *Cystopteris,* refers to their swollen or inflated spore sacs (*indusia*). The fruit of the Wild Cucumber or Balsam Apple is an ovate bag covered with prickles, hence the species name *Echinocystis*, i.e., spiney-bladder.

The root *Physa-* appears in the genus names for the ground cherries (*Physalis*), all of which have a bladder-like fruit. (My grandmother used to make ground cherry preserves and pie, both of which I thought were awful!) A plant whose fruit resembles that of the ground cherries is Apple-of-Peru or *Nicandra physalodes.* (Nicandra was an ancient poet.)

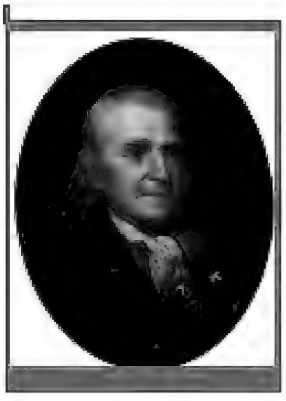
Physo- appears in *Physocarpus opulifolius* (Ninebark) which has dry bladder-like fruits and *Physostegia virginiana* (Obedient Plant) where *physostegia* means bladder-cover, referring to the fruiting calyx.

Name That Botanist :

by Mary Standaert

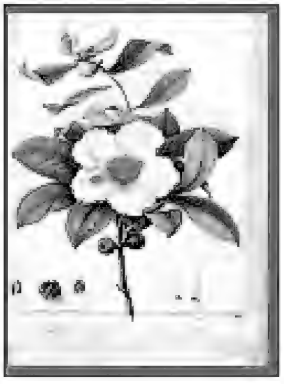
John Bartrum (1699-1777)

- **First American born botanist**
- **Quaker, Farmer, Royal Botanist**
- **Plant Collector, Explorer, Entrepeneur**
- **25% of plants sent to England,<1760**
- **Bartrum Gardens,extant**
- **1743, American Philosophical Society**
- **1765, *Franklinia alatamaha***
- **Father to 11 children who maintained his botanical garden and legacy.**



William Bartrum (1739-1823)

- **5th son of John Bartrum**
- **Explorer 1751-1777 (ages 12-38)**
- **Unsuccessful merchant, planter**
- **Poet, Artist, Writer**
- **Bartrum's Travels, pub. 1791**



Fl,Ga,Carolinas (1773-1777)

called by Indians, "Pug-Pucky" (flower gatherer)

- **Collected, planted *Franklinia* seeds**
- **Never married, lived in family home, entertained visiting botanists.**

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For any change of address, email or telephone number, please send an email to wcbotanicalclub@gmail.com.

PRESIDENT'S MESSAGE

Gayle Mercurio

Sitting there trying to think of something to write, my hubby, Vince, walked in, plopped a big book down in front of me and said "I have the subject for your next article… **flower flies".** The name of this 511 page book is Flower Flies of North Eastern North America. Included in the book are location maps for each species which covers the southeast. After reading the book and doing lots of research, my eyes were opened to a whole new world of pollinators.

Flower Flies

Pollinating flowers is big business and essential for their survival. Because it is done in so many ways, it takes a lot of methods to accomplish this task. Insects are a large factor in transportation of pollen. Honey bees and bumble bees do a great deal of the work and along with these are lesser known flower flies. The flower fly's method is Batesian mimicry which, according to Webster's Dictionary, is where an edible animal is protected by its resemblance to a noxious one that is avoided by predators. In other words, flower flies are mimics of stinging insects. About a third of all the pollen collected is done by flower flies which makes them important contributors. There are around 6,000 species of flower flies and of these nearly 900 species in North America. Many more are being discovered each year.

Flower flies are called syrphid flies, pronounced "surfids", of the insect order Syrphidea. In appearance they look and behave like the insects they mimic to accomplish their duties. To be especially good pollinators, they mimic honeybees, bumble bees, wasps, hornets and yellow jackets. Some even buzz like a bee. Since syrphids can neither bite nor sting, they are harmless to humans but are protected from predators by the fierce reputation of the insects they mimic. Though at first glance they look much like their mimics but if studied very closely you can see the difference. The flower fly's eyes are compound and much larger, the antennae are shorter and thicker with bristles in the middle, some syrphids hold their prolegs up in front and wiggle them to mimic wasp antenna.

Syrphids do not have pockets or spurs to store pollen. Pollen simply clings to their body. Flower flies only have one pair of wings instead of two pairs. Flower flies disguise themselves with vivid colors and patterns to mimic a specific insect. Most have black, brown or yellow stripes with markings of red, orange or yellow as needed. In order to collect pollen and nectar, their mouth parts are either an extendable sponge to soak it up on an open flower head or a tube to suck it up from a tubular flower. Even though flower flies cannot carry as much pollen as most pollinators, they work much faster and visit the flowers more often. Flower flies are sometimes called hover flies because they hover over flowers like bees. They are superb hoverers and can remain perfectly still in the air. Bees and wasps tend to go up and down as they hover. Also flower flies have the unusual ability to fly backwards.

In addition to the value of adult syrphids as pollinators, the larvae are also extremely beneficial in other ways. About a third of the larvae eat soft body insects like aphids. Others fulfill other duties. Some are fungal feeders helping with recycling, aquatic filter feeders in ponds and lagoons, feeders of bacteria in tree sap or under tree bark and specialists in old growth forests as indicators of the forest's health are just a few of the many beneficial things they do.

Flower flies go through complete metamorphosis… egg, larva, pupa, adult. Hundreds of single tiny eggs are placed individually on leaves by the female syrphids. In about three days, the larvae hatch as creamy white, green or brown tapered oval slug-like maggots that are blind, legless and have transparent skin. Its sucking mouth is a triple pointed dart for piercing prey. After sucking the soft bodied insect dry, the outside skin is discarded. These ferociously feeding maggot larvae search for food on leaves and in soil. As valuable predators, larval syrphid fly maggots eat damaging insects such as aphids, thrips, scales, small caterpillars and other small insects. They can eat 50-60 aphids in a day and up to 400 during their three larval stages. Evidence of their foraging presence is the oily black tar like smudges left behind on the leaves.

In about two to three weeks the slug like maggots complete their last instar and develop into a pupa with a hard skin around their body. Adult syrphids emerge in one to two weeks unless they are late and overwinter and emerge in the spring. You may see newly emerged flower flies in April, May or June. After a season of pollinating, they will disappear usually sometime in October. Insect pollinators are credited with over 500 billion dollars of direct benefits to crops each year. The syrphid flower flies are credited with innumerable benefits to wildflowers.

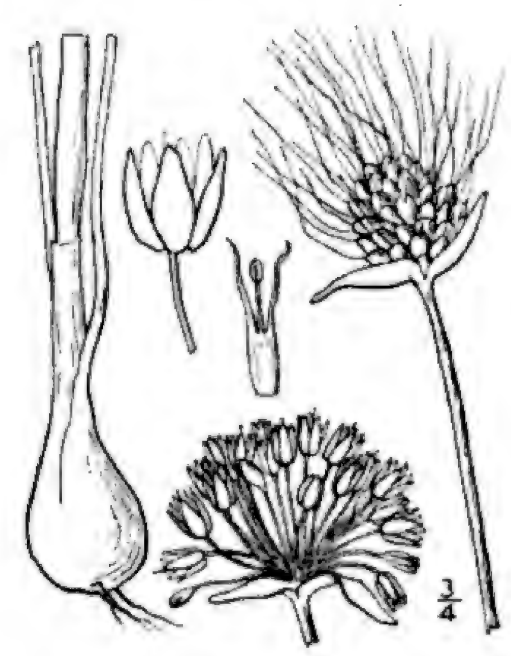
This coming spring I'm looking forward to searching for flower flies. It would be a thrill to watch them working and maybe even find some of their larvae devouring aphids.

Missing Plants

We have plants in our database that we've never recorded. Maybe if we knew what they looked like we could find them.

Field Garlic (*Allium vineale*)

Field Garlic (Allium vineale) * Purplish or greenish flowers in an umbel; leaves very narrow, hollow. Flowers often replaced by bulblets. 1-3' high. Serious pest of lawns, pastures and meadows; it is native to Europe, northwestern Africa and the Middle East, and a non-native weed in the USA . Summer. Lily Family.



Roxanna Martin rlm51809_019 May Spartanburg County SC

Roxanna Martin rlm6610_18 June Spartanburg County SC

We've probably seen this and ignored it. Maybe we could be a little more alert in the future.

What's in a Name – *Linnaea*
by Penny Longhurst

Linnaeus is probably the most famous botanist in the world. Sadly, the only plant that bears his name, *Linnaea borealis* (Twinflower), has not been reported in this area, other than a herbarium specimen that was collected in Sevier County, Tennessee in 1892[1,2]. I have seen Twinflower on several hiking trips to the Northeastern states and Canada. It also grows in many Western states, as far south as Arizona and New Mexico. It's a little strange, therefore, that it disappeared from the Southern Appalachians. The photographs below were taken in Newfoundland where it grows in abundance.

Carl Linnaeus was born in Råshult, Sweden in 1707. His father, a Lutheran curate, was an amateur botanist and taught him the names of the local plants. From an early age Carl was a keen collector of botanical specimens. In 1727 he enrolled at the University of Lund to study Medicine (and Botany on the side), but transferred to the University of Uppsala the following year. The Professor of Botany, Olof Rudbeck the Younger, hired Linnaeus and he gave his first botanical demonstration in the Botanical Gardens at Uppsala in 1730. Linnaeus named our very own Green-headed Coneflower, "A tall noble American plant", *Rudbeckia laciniata* in honor of Rudbeck. That same year he began work on a new system of botanical classification, "The Sexual System of Linnaeus", dividing plants into 24 classes based on the number of stamens and pistils. The first edition of his "*Systema Naturae*", which included classification of the plant, animal, and mineral kingdoms, was published in 1735.

In 1732 Linnaeus received a grant to mount a botanical expedition to Lapland. During this trip he covered more than 3,000 kilometers and found the Twinflower plant which would be named *Linnaea borealis* in his honor. He travelled to Holland in 1735 to obtain his medical degree and remained there until 1737. Most of that time was spent at Hartekamp, the estate of George Clifford, a wealthy Dutch banker. Linnaeus was employed to supervise his hothouses, catalog his herbarium, and act as his personal physician. He was provided access to Clifford's extensive library, which included Mark Catesby's "*The Natural History of Carolina, Florida and the Bahama Islands*" as well as many other important botanical texts. In 1738 Linnaeus published "*Hortus Cliffortianus*", a catalog of the plants growing at Hartekamp and found in the herbarium. That same year, Linnaeus returned to Sweden and moved to Stockholm to work as a physician in order to earn enough money so that he could get married. In Stockholm his reputation as a curer of venereal diseases and smallpox spread and his practice grew!

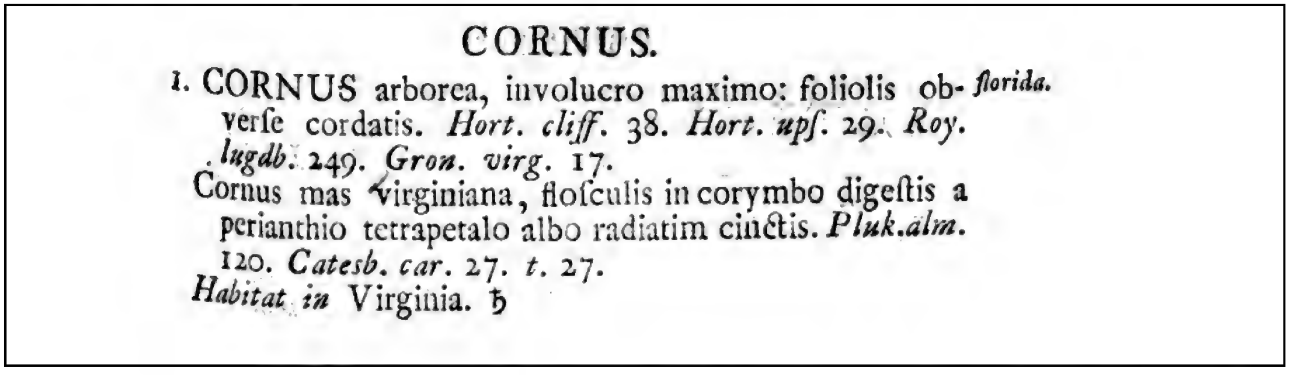
In October 1741, Linnaeus and his family moved to Uppsala where he was appointed Professor of Medicine and Botany at the University. They made their home in the Professor's residence in the Botanic Garden, now the Linnaeus Garden and Museum. The Garden had fallen into decay after the great fire of Uppsala in 1702, but Linnaeus managed to get money allocated to renovate the house, build an orangery, and restore the plantings.

As Professor of Botany, Linnaeus taught students in the Garden or the Gustavianum Building (now museum) at the University for the next 35 years. Every Saturday during the summer, he would lead as many as 150 students on botanical excursions (and we worry about the numbers on our field trips?!). When a rare plant was discovered, a bugle was sounded and everyone ran to see what was found. The students who found the best plants got to eat lunch at the same table as Linnaeus!

Linnaeus is probably best known for his binomial nomenclature system of naming organisms, where one word (the genus) is applicable to a group of similar plants and the second (the specific epithet) to a specific member of that group. The genus, a group of species possessing similar flowers and fruits, was often named after fellow botanists, patrons, friends, or characters from Greek or Roman mythology, while the epithet was often descriptive, referring to geography, habitat, form, or commemorative of the plants' discoverer.

In 1753 he published his 1,200 page "*Species Plantarum*" which included all plants he had actually seen or read about in published sources (almost 6,000 species and 2,000 genera arranged by his sexual system) with their new binomial names, brief descriptions, references to previous literature, and geographical location.

Before the introduction of binomial scientific nomenclature the names of plants included a long description in Latin. For example, the figure below illustrates Linnaeus's proposed nomenclature for the Flowering Dogwood. The genus is carried over as "*Cornus*" but in the right margin is the new specific epithet "*florida*". Then follows the descriptions found in previous publications including *Hortus Cliffortianus* (which he wrote!) and Catesby's book, as well as page or plate numbers. Finally, the plant is found in Virginia. *Species Plantarum* was the starting point for modern botanical nomenclature. He later went on to apply binomial nomenclature to the animal kingdom. For plants described by Linnaeus the genus and epithet are followed by the letter "L", such as "*Cornus florida* L."



CORNUS.

1. CORNUS arborea, involucro maximo: foliolis ob- *florida.*
verſe cordatis. *Hort. cliff.* 38. *Hort. upſ.* 29. *Roy. lugdb.* 249. *Gron. virg.* 17.
Cornus mas virginiana, floſculis in corymbo digeſtis a perianthio tetrapetalo albo radiatim cinctis. *Pluk. alm.* 120. *Catesb. car.* 27. *t.* 27.
Habitat in Virginia. ♄

Linnaeus's familiarity with so many different plant species was due to two sources: his mentors in Sweden who gave him access to their hothouses and libraries, and his pupils or "Apostles" who travelled the world acquiring new specimens (plant and animal) that were sent back for him to examine. Seventeen apostles were sent off to collect from all corners of the earth; not all survived. Among the most notable was Per Kalm who was sent to the Northeastern United States and Canada between 1747 and 1751 to find plants that would survive in Sweden. He returned with 90 unique plants, including *Kalmia* which was named in his honor. Another famous apostle was Daniel Solander, who joined the English botanist, Joseph Banks, when he sailed with Captain Cook on his first voyage around the world between 1768 and 1771, including stops in Australia and New

Zealand. Almost 4,000 new plants were collected on the voyage. Solander annoyed Linnaeus by remaining in England on his return and not sending him any specimens.

In his later years Linnaeus was plagued by ill health and suffered a series of strokes. He died in January 1778 and is buried in Uppsala Cathedral. His books, correspondence, and collections were purchased by a keen English naturalist, James Edward Smith. On his death Smith's widow sold the collection to the Linnean Society of London, where they are housed today.

References:

1. White, Peter S.: Looking for Linnaea: The high Smokies still protect some secrets on their rugged slopes. The Tennessee Conservationist vol. XLVII, September/October, No. 5, pages 14-16, 1981

2. Kemp, Steve: LINNAEA BOREALIS, FOUND—THEN LOST. Great Smoky Mountains Association News. June 4, 2018

Blunt, Wilfred: The Compleat Naturalist: A Life of Linnaeus. 1971.

Online Linné: On this website Uppsala University presents results of research relating to the work of one of the most famous professors throughout its history, namely Carl Linnaeus (Carl von Linné) (1707–1778).

The Linnean Society of London: The Society takes its name from the Swedish naturalist Carl Linnaeus (1707–1778) whose botanical, zoological and library collections have been in its keeping since 1829

Linnaei, Caroli:. Species plantarum. Holmiae :Impensis Laurentii Salvii,1753

The Linnaean Gardens of Uppsala, Uppsala University. The Linnaeus Garden lies in central Uppsala, just north of Svartbäcksgatan. The Botanical Garden is directly west of Uppsala Castle.

Plants We Love to Hate! Hog Peanut (*Amphicarpaea bracteata*)

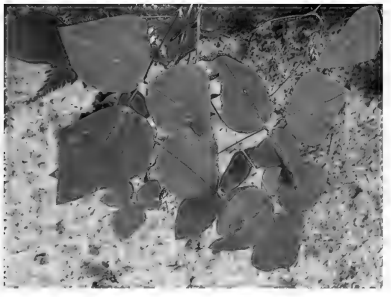
by Penny Longhurst

On our field trips we are surrounded by plants we love and some we hate. We see Hog Peanut, the plant described in this issue of Shortia, on almost every walk. It's a native, found principally east of the Dakotas and down the Appalachian mountains to northern Georgia, although sporadic occurrences have been reported in other southeastern states.

Like Pilewort, Hog Peanut has been known for a very long time. Linnaeus gave Hog Peanut the botanical name *Glycine comosa* and described it as found in shady places (*umbrosis*) in Virginia. He references a 1695 publication from James Petiver's *Musei Petiveriani* (*Pet. mus.*). Petiver had 6,000 botanical specimens; many received from the Reverend Hugh Jones of Maryland. John Clayton, a county clerk in Virginia, sent samples of Hog Peanut (as well as many other plants) to the Dutch botanist, Jan Fredrik Gronovius, who included it in Flora Virginica (*Gron. virg.*) published between 1739 and 1743. Linnaeus named Spring Beauty, *Claytonia*, in honor of this John Clayton.


comoſa. 5. GLYCINE foliis ternatis hirſutis, racemis lateralibus.
Glycine foliis ternatis. *Gron. virg.* 85.
Phaſeolus marianus ſcandens, floribus comoſis. *Pet. muſ.* 453.
Habitat in Virginiæ *madidis umbroſis.*

Hog Peanut is a weedy, coiling, annual vine, despised by some (mentioning no names!) for its tendency to clamber over other plants. We don't generally pay it much attention, other than to abuse it! However, it's got some interesting characteristics, including one we never think of looking for. Hog Peanut has typical pea family trifoliate leaves which are a larval host for skipper and cloudy wing butterflies, as well as beetles. The flowers that we typically associate with the plant are pea-like, with wings, and after fertilization produce pods containing up to 4 seeds, which I don't recall ever seeing. The genus name, *Amphicarpaea,* is derived from "*Amphi*" meaning both kinds and "*carpos*" meaning fruit. That's because the plants have a second, hidden, flower which I have never seen either! Clearly, I'm not a very observant botanist.



Runners (stolons) produce self-fertile flowers without petals. Each produces a single-seeded "peanut" that buries itself just under the soil. These are edible and can be eaten like other nuts. They may also be grubbed up and eaten by wild hogs, hence the common name. I pulled up some Hog Peanuts while hiking in September and it seemed to me that you would need a whole bunch of those teeny nuts to make eating them worthwhile, but maybe they still needed time to grow!

References:

Clayton, J. & Gronovius, J. F.: Glycine foliis ternatis. Flora Virginica. Page 85, 1739.

Illinoiswildflowers.info: Hog Peanut. Amphicarpaea bracteata.

Linnaei, C.: Glycine foliis ternatis hirsutis. Species plantarum. Holmiae :Impensis Laurentii Salvii, Vol 2. Page. 754, 1753

Mahr, S.: American Hog-peanut, Amphicarpaea bracteata. University of Wisconsin at Madison Master Gardeners Program, December 10, 2018

Petiver, J.: Phaseolus Marianus scandens, floribus comosis. Musei Petiveriani centuria prima. #453, Page 41, 1695

Our Rare American Barberry

By Lucy Prim

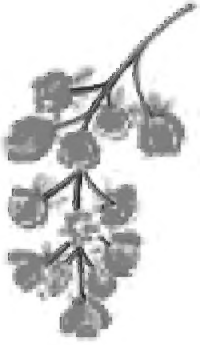
For many years now I've noticed a very prickly little shrub, one here at my house and one close to the lake at Carl Sandburg's, that has red shiny oblong berries that daintily dangle from a crooked thorny stem. Could this be a native plant? After researching it in my books, I was disappointed to find out it wasn't native, but was Japanese Barberry, *Berberis thunbergii.* Ron Lance, in his book "Woody Plants of the Southeastern United States," describes this plant as, "An exotic shrub that has naturalized from VA to GA, mostly in Appalachian and Piedmont regions. The most commonly encountered Barberry in open woods, forest edges, and pastures."

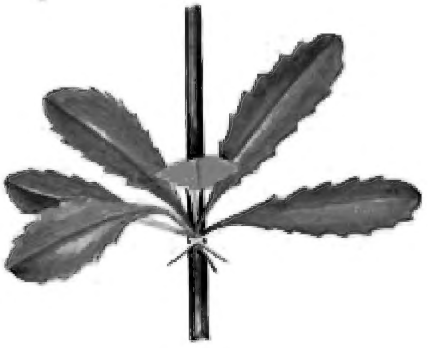
My disappointment soon changed to surprise when I came upon an interesting story! Even though the most commonly encountered Barberry is the exotic Japanese Barberry, we do have a native Barberry, the very rare and seldom encountered American Barberry, *Berberis canadensis* which, amazingly enough, has been the subject of an eradication program for the last 100 years! Why would this nice rare native shrub be the subject of an eradication program? Because it is the alternate host for Black Stem Rust, a fungus which is devastating to wheat and other cereal crops. Although the Barberry, our native and the European Barberry which is also an alternate host for this fungus, has been extirpated in other states, that has not happened here in North Carolina. Here in our mountains, there are still some populations we might come upon and it has been reported in Pickens County. According to Ken's records, the club has seen it at Kellogg's Center and Humphrey Farm. The skeptics among us would like to see these for ourselves!

As you can see from the drawings I made, the leaves of *Berberis canadensis* are quite different from the leaves of *Berberis thunbergii.* Another clue is that the spines of *B. canadensis* are usually in threes. Most likely when we come upon a Barberry in the woods, it will be Japanese Barberry, but maybe it will be our rare native, described by Alan Weakley in his Flora as "a broad Southern Appalachian-Ozarkian endemic." I will certainly be keeping my eyes peeled for it!

Berberis canadensis

American Barberry

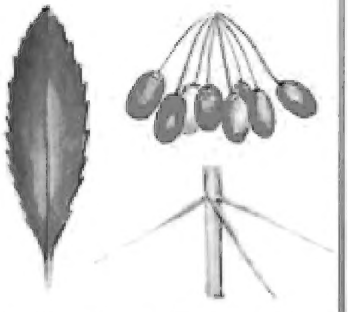
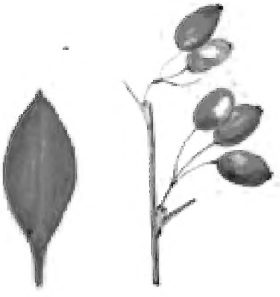
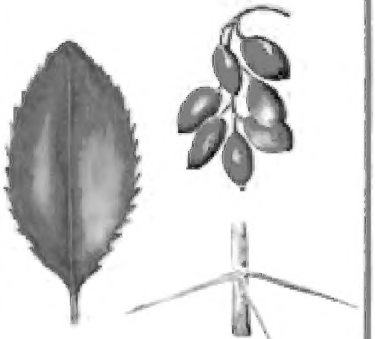




Deciduous
Weak bristle on each tooth tip
Spines are mostly trifurcate but some are bifurcate
1-9 teeth on each side of leaf

Flowers- 3 to many on a drooping raceme

Leaves: They grow from the stem clustered in fascicles.

Wintergreen Barberry	Japanese Barberry	European Barberry
B. julianne	**B. thunbergii**	**B. vulgaris**
		
The teeth are tipped with firm prickles. Leaves are evergreen Spines are mostly trifurcate and quite long.	This is the most commonly encountered Barberry in our area. It is immune to wheat rust	Leaves have 18-36 bristle-tipped teeth on each margin. Because this Barberry served as an alternate host to wheat rust it has been quite throughly eradicated and may no longer occur in our area.

A Voice from the Past

Here's a poetic contribution from the March 1980 issue of Shortia. It doesn't sound like too much has changed in the last 40 years.

BOTANICALLY SPEAKING

No tiny seed nor noxious weed
Escapes our close attention
From allium to zizia
Or dandelion to gentian.
We poke and pry and scrutinize
And peer in mossy crannies
And when a slope's too slippery
We slide down on our fannies
We photograph and carry books
For solemn consultation
On species new as we pursue
Our botany education.

Helen Tullar

Minutes of October 22, 2019 Western Carolina Botanical Club Board Meeting

Present: President Gayle Mercurio, Secretary Mary Standaert, Past-President Susan Sunflower, Scheduler Juanita Lambert, Members-at-Large David Heavner and John Harrison, Recorder and *Shortia* Editor, Ken Borgfeldt, Interim Treasurer and Webmaster Penny Longhurst, Club Member Vince Mercurio

President Mercurio called the meeting at Sol Y Luna to order at 11:15 am on October 22, 2019.

The minutes of the October 11, 2018 Board meeting were unanimously accepted as presented.

Penny Longhurst presented the Treasurer's Report. The balance on hand at the start of the fiscal year (July 2019 - June 2020) was $4,722.24. The balance as of October was $4,284.34 of which $107.30 is dedicated to printing the Buck Spring Nature Trail Brochures. A discussion was held concerning the effectiveness of printing the brochures as they do not seem to be readily available to the public. No decision was made. Eight members have joined since July bringing $64 in income. Expenditures paid to date are $483.90 for 2018-2029 printing costs and $18 for the website URL (wcbotanicaniclub.org). $300 is scheduled for future indoor presentations through Dec. 2019, a $50 donation will be given to Asheville Botanical Gardens in December 2019 and an $800 donation will be given to Bullington in April 2020. The projected end of the year (June 30, 2020) balance was projected to be approximately $4300. Penny also reported that Joe Standaert will make the wooden name tags for new members. Membership now stands at 105 with 23 new members. Ken Borgfeldt sends welcome e-mails to new members.

As the Treasurer position was vacant, following the financial report, a motion was made by Susan Sunflower and seconded by Ken Borgfeldt that when Board vacancies occur between elections, that the Board be authorized to fill the position with an interim appointment until the next election cycle for that position. After discussion, the motion was unanimously passed. John Harrison moved to appoint Penny Longhurst as the Interim Treasurer. This motion was seconded by David Heavner. Penny Longhurst was elected by a unanimous vote and accepted the position.

Webmaster Penny Longhurst reported that there had been 149 posts to the Club website with 245,944 views by 17,443 viewers since its inception in October 2015. In 2019, there were 96,302 views, 6,425 viewers and 34 posts. On August 18, 2019, the peak day for 2019, there were 2,935 views of Sam Knob, Flat Laurel Loop. Of additional note, 39 membership brochures, 19 Buck Springs brochures, 39 Weekly Flora, 48 2015 Fall *Shortia* issue with a tribute to Millie Pearson and 245 Kellogg Center Trail maps have been viewed or downloaded since July 2019

Scheduler Juanita Lambert reported that the next scheduling meeting would be held Dec. 5th at Etowah library. Indoor meetings will begin on Friday, Nov. 1st. Programs for the indoor sessions are being finalized. Suggestions for indoor programs and botany hikes are welcomed.

Recorder and E-version editor of *Shortia*, Ken Borgfeldt reported that all is going well with plant lists but that printing costs are increasing with the addition of many seldom-seen plants. Gayle Mercurio continues to determine which plants on the lists are native and which are invasive. *Shortia* is sent electronically to members on the last day of the quarter. Articles to be included in the quarter's edition need to be submitted to Ken by the 15th of the last month of the quarter.

A motion was made, seconded and unanimously passed that the minutes of the club meetings be approved electronically by the board soon after the meeting, rather than waiting for a prolonged time before the occurrence of the next meeting. Following approval minutes will be distributed in the subsequent edition of *Shortia*

Penny Longhurst suggested that the club consider a 4-hour boat excursion on Lake Jocassee in March 2020 to see Oconee bells in bloom. This would include a botany presentation as an indoor program prior to the trip. The cost would be $55 per person with a $395 minimum required. The board indicated their approval to move forward with inquiring about the trip. The tentative schedule is for the Oconee Bells talk on Friday, March 13 and the boat trip on Monday, March 16, 2020.

Plans were made for the club Holiday Party in December. Members will be asked to bring their own place settings. Susan Sunflower will bring cloth table cloths and will facilitate the gathering as a Zero Waste event.

The meeting adjourned at 12:45 pm

Respectfully submitted,

October 25, 2019

Mary L. Standaert

SHORTIA

A quarterly publication of the Western Carolina Botanical Club

Vol. XXXI No. 4

Editor: Ken Borgfeldt

4Q, 2019

The mission of the Club is to identify and study native plants and their habitats and to advocate the protection of biodiversity in our natural world. Membership is open to all. Individual/family memberships are $15. New members joining from the period July 1-December 31 pay $8. All memberships are renewable on January first of each year. Send dues to Western Carolina Botanical Club, 351 Cheestoonaya Way, Brevard, NC 28712